

REMARKS

The Office examined claims 3-7, 9-12, 14-18 and 20-25, and all claims are rejected. Applicant respectfully submits that the Office has committed clear error in rejecting the claims, because the Office has failed to show that the cited references meet all of the limitations recited in the claims. Therefore, applicant respectfully requests reconsideration and withdrawal of the rejections in view of the following discussion.

This Pre-Appeal Brief Request for Review is submitted along with a Notice of Appeal.

Claim Rejections Under § 103

On page 2 of the Office Action, claims 3-7, 9-12, 14-18 and 20-25 are rejected under 35 U.S.C. § 103(a) as unpatentable over *Petre et al.* (U.S. Patent No. 7,158,558) in view of *Onggosanusi et al.* (U.S. Publication No. 2002/0196842). Applicant respectfully submits that the Office has committed clear error in rejecting the claims, because the Office has failed to show that the cited references meet all of the limitations recited in claims 3-7, 9-12, 14-18 and 20-25.

On page 3 of the Office Action, the Office acknowledges that *Petre* does not teach estimating the signal to interference ration (SINR) from the despread CPICH, and relies on *Onggosanusi* to disclose that feature.

In rejecting claims 3, 6, 7, 9, 11, 12, 14, 17, 18, 20 and 22-25, the Office states that *Petre* discloses a method of communication using a common pilot channel (CPICH) in a W-CDMA receiver which receives the CPICH. The signal is equalized using chip level equalization and the equalized CPICH channel is despread. The Office admits that *Petre* fails to disclose estimating SINR from the despread CPICH, but points to *Onggosanusi* for disclosing that feature.

In rejecting claims 4 and 16, the Office states that the combination of the teachings in *Petre* and *Onggosanusi* discloses a virtual space-time decoding being used on the CPICH channel in order to mimic data channel space-time transformation.

In rejecting claims 5, 10 and 15, the Office states that the combination of the teachings in *Petre* and *Onggosanusi* discloses that received chips are oversampled at chip-level.

In rejecting claim 21, the Office states that the receiver is in a mobile terminal.

It is respectfully submitted that in the claimed invention, claim 3 has the limitation of despreading a Common Pilot Channel in a spread-spectrum receiver, wherein the spread-spectrum receiver is adapted to receive a signal stream in space-time diversity transmission. Claim 6 has the limitation of an equalization stage for chip level filtering received chips, wherein the received chips are obtained from a signal stream in space-time transmit diversity transmission. Claim 11 has the limitation of a transmitter for transmitting a signal stream in space-time transmit diversity transmission to the receiver. Claim 17 has the limitation of a receiver, operatively connected to the antenna, for receiving communication signals in space-time transmit diversity transmission. Claim 24 has the limitation of means for transmitting a signal stream to the receiver in space-time transmit diversity transmission.

Thus, the common feature among claims 3, 6, 11, 17 and 24 is the transmitted or received signal stream in a form for space-time transmit diversity transmission.

The Office states that *Onggosanusi* discloses estimating the signal-to-interference ratio (SINR) from the despread CPICH. The Office also states that *Onggosanusi* discloses that the transmitter comprises multiple antennas (Figure 3 and paragraph [0049]). The Office is silent on whether *Onggosanusi* discloses the signal stream is the form for space-time transmit diversity transmission.

While it is true that *Onggosanusi* discloses a communications system having a number of transmit antennas as shown in Figures 1 to 4, the multiple transmit antenna system is used in a multi-input multi-output (MIMO) system (see paragraphs [0008], [0009], [0013], [0016], [0049], [0062]). In one of the embodiments, *Onggosanusi* uses four transmit antennas TAT₁ to TAT₄ and a larger number of receive antennas RAT₁ to RAT_Q (Q>4) in a MIMO system with double space-time block coded transmit antenna diversity (DSTTD). In this DSTTD system, *Onggosanusi* uses two STTD encoders to combine information multiplexing with transmit diversity MIMO.

It is respectfully submitted that a signal transmitted in a DSTTD system is different from a signal stream in the space-time transmit diversity transmission, because a DSTTD system

applies information multiplexing into two STTD blocks. For example, one of the STTD blocks transmits symbols $S_{1,1}$ and $S_{1,2}$ whereas the other STTD block transmits symbols $S_{2,1}$ and $S_{2,2}$ (see paragraph [0083]). The spatially parallel transmission causes additional interference. This interference would not be correctly taken into account by the claimed pilot processing for the space-time transmit diversity transmission scheme. Thus, the DSTTD scheme in *Onggosanusi* is not applicable for space-time transmit diversity transmission. Likewise, the claimed invention is not applicable for the DSTTD transmission.

Petre does not disclose that the signal stream is in the form for space-time transmit diversity transmission. *Onggosanusi* does not disclose that the signal stream is in the form for space-time transmit diversity transmission. Therefore, for at least this reason, *Petre* and *Onggosanusi*, alone or in combination, fail to disclose or suggest all of the limitations recited in claims 3, 6, 11, 17 and 24.

For at least the above reasons, *Petre*, in view of *Onggosanusi*, fails to render claims 3, 6, 11, 17 and 24 obvious.

As for claims 4, 5, 7, 9, 10, 12, 14-16, 18, 20-23 and 25, they are dependent from claims 3, 6, 11, 17 and 24 and recite features not recited in claims 3, 6, 11, 17 and 24. Therefore, these dependent claims are patentable at least in view of their dependencies.

CONCLUSION

Applicant respectfully submits that the present application is in condition for allowance, and such action is earnestly solicited. Applicant hereby authorizes the Commissioner to charge Deposit Account No. 23-0442 for any fee deficiency required to submit this response.

Respectfully submitted,

Date: 10.16.07



Cathy A. Sturmer
Agent for the Applicant
Registration No. 60,869

WARE, FRESSOLA, VAN DER SLUYS
& ADOLPHSON LLP
Bradford Green, Building Five
755 Main Street, P.O. Box 224
Monroe, CT 06468
Telephone: (203) 261-1234
Facsimile: (203) 261-5676
USPTO Customer No. 004955